

Patent Application
ATM-515 (7486)

Section I. (Amendments to Claims)

Please cancel claim 2 and amend claims 1, 18-19, and 21, as in the following listing of claims 1-46:

1. (Currently amended) A process for improving delivery reproducibility of a cyclosiloxane precursor to a chemical vapor deposition reactor, comprising the steps of:
 - (a) providing a cyclosiloxane precursor;
 - (b) treating said cyclosiloxane precursor, by reducing the concentration of water and ~~optionally~~ at least one impurity selected from the group consisting of acidic and basic impurities from said cyclosiloxane precursor to produce a purified cyclosiloxane precursor ~~having less than <0.001% of water and optionally less than <0.001% of the at least one impurity;~~
 - (c) vaporizing said purified cyclosiloxane precursor; and
 - (d) delivering vapor of said purified cyclosiloxane precursor to said chemical vapor deposition reactor,wherein treatment of the cyclosiloxane precursor functions to prevent or minimize premature polymerization of said cyclosiloxane precursor in the chemical vapor deposition reactor and associated delivery lines, thereby improving delivery reproducibility of the cyclosiloxane precursor.
2. (Cancelled).
3. (Previously presented) The process according to claim 1, wherein said at least one impurity is acidic.
4. (Previously presented) The process according to claim 1, wherein said at least one impurity is basic.
5. (Original) The process according to claim 1, wherein said cyclosiloxane precursor comprises the formula $[RR'Si-O]_n$, wherein each of R and R' is same or different and independently selected from the group consisting of hydrogen, hydroxyl, C₁-C₈ alkyl, C₁-C₈ alkoxy, C₁-C₈ alkene, C₁-C₈ alkyne, and C₁-C₈ carboxyl; and n is from 2 to 8.
6. (Original) The process according to claim 1, wherein the cyclosiloxane precursor is selected from the group consisting of polyhedral oligomeric silsesquioxanes (POSS),

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octamethylcyclotetrasiloxane (OMCTS), hexamethylcyclotetrasiloxane (HMCTS), tetramethylcyclotetrasiloxane (TMCTS), and mixtures thereof.

7. (Original) The process according to claim 1, wherein the cyclosiloxane precursor is 1,3,5,7-tetramethylcyclotetrasiloxane.
8. (Cancelled).
9. (Previously presented) The process according to claim 1, wherein in step (b), said cyclosiloxane precursor is treated by:
 - contacting the cyclosiloxane precursor with an adsorbent bed material to produce said purified cyclosiloxane precursor; and
 - removing the purified cyclosiloxane precursor from the adsorbent bed material.
10. (Previously presented) The process according to claim 9, wherein said adsorbent bed material is selected from the group consisting of: silica gel, molecular sieves, aluminum oxide, carbon, calcium oxide, calcium chloride, sodium sulfate, magnesium perchlorate, phosphorus pentoxide, silicide, metals, and metal hydrides.
11. (Previously presented) The process according to claim 9, wherein the adsorbent bed material is calcium oxide.
12. (Previously presented) The process according to claim 9, wherein the adsorbent bed material is calcium hydride.
13. (Previously presented) The process according to claim 9, wherein the adsorbent bed material comprises a combination of adsorbents.
14. (Previously presented) The process according to claim 9, wherein the cyclosiloxane precursor is further contacted with a second adsorbent bed material.
15. (Previously presented) The process according to claim 9, wherein said purified cyclosiloxane precursor is removed from said adsorbent bed material by distillation.

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16. (Previously presented) The process according to claim 9, wherein said purified cyclosiloxane precursor is removed from said adsorbent bed material by decantation.
17. (Previously presented) The process according to claim 9, wherein said purified cyclosiloxane precursor is removed from said adsorbent bed material by pump.
18. (Currently amended) The process according to claim 1, wherein said purified cyclosiloxane precursor comprises less than $< 0.001\%$ of the at least one impurity.
19. (Currently amended) The process according to claim 1, wherein said purified cyclosiloxane precursor comprises less than $< 0.00001\%$ of the at least one impurity.
20. (Cancelled).
21. (Currently amended) The process according to claim 1, wherein said purified cyclosiloxane precursor comprises less than ~~$< 0.00001\%$~~ 0.001% of water.
- 22- 46. (Canceled).

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